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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/575,890

08/16/2006

Walter Demuth

1006/0113PUS1

5525

60601 7590 03/11/2010
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EXAMINER

ROSATI, BRANDON MICHAEL

ART UNIT

PAPER NUMBER

3744

MAIL DATE

DELIVERY MODE

03/11/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/575,890	Applicant(s) DEMUTH ET AL.	
	Examiner BRANDON M. ROSATI	Art Unit 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 11 and 18-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-17, and 24-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the amendment filed on 12/7/2009. Currently, claims 29-32 have been added and claims 1-10, 12-17, and 24-32 are pending.

Specification

Applicant's amendment to the abstract and specification filed on 12/7/2009 have been entered.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-7, 10, 12-17, 24-26, and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demuth et al. (DE 10260030) in view of Carpentier (U.S. Pub. No. 2001/0050166 A1).

Regarding claims 1 and 29, Demuth et al. disclose in Figure 1, all the claimed limitations including a heat exchanger having a block which has pipes (2) on which a first and second medium can flow on respective sides, having flow ducts (4), and pipe ends, end pieces (combination of (8, 12, and 16) and (24, 28, and 30), each having a base plate (8 and 24), a diverter plate (12 and 28) and a cover plate (16 and 30), as well as an inlet and outlet chamber (20 and 21). It is noted that the phrases "for a motor vehicle," "being possible to conduct the first medium from the inlet chamber to the outlet chamber to the outlet chamber through the flow ducts," and "can flow on the secondary side" are statements of intended use and the device is capable of performing the function. Demuth et al. do not disclose a housing casing surrounding the pipes having an inlet and outlet. However, Carpentier disclose in Figure 1, a housing casing

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(1) surrounding pipes (Paragraph [0023]). Hence, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the combined teachings of Demuth et al. with the housing casing of Carpentier because this would allow for the heat exchange unit to be a self contained unit which would then be able to utilize two fluids (i.e. two liquids).

Regarding claim 2, Demuth et al. disclose in Figure 1, flat pipes (2). It is noted that claim 2 contains a product by process limitation (i.e. extruded). Where a product by process claim is rejected over a prior art product that appears to be identical, although produced by a different process, the burden is upon the applicants to come forward with evidence establishing an unobvious difference between the two. See *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983)

Regarding claim 3, Demuth et al. disclose in Figure 1, each pipe having a plurality of flow ducts (4).

Regarding claim 4, Demuth et al. disclose in Figure 1, the heat exchanger block having two end pieces (combination of (8, 12, and 16) and (24, 28, and 30)

Regarding claim 5, the combined teachings of Demuth et al. and Carpentier disclose the housing. It is noted that, when in combination with Demuth et al., the housing would be between the end pieces. Further, it would have been obvious to one of ordinary skill to position the housing between the two end pieces since, at this location, the second medium would be flowing.

Regarding claim 6, Demuth et al. disclose in Figure 1, two plates of the end piece are integral.

Regarding claim 7, Carpentier disclose in Figure 1, a housing (1) which is a made of metal (i.e. iron) (Paragraph [0021]).

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Regarding claim 10, Carpentier disclose in Figure 1, a housing (1) which has an inlet (25) and outlet (29) arranged on opposite sides of the housing.

Regarding claim 12, Carpentier disclose in Figure 1, a housing (1) which has an inlet (25) and outlet (29) arranged on opposite ends of the housing.

Regarding claim 13, the combined teachings of Demuth et al. and Carpentier disclose distributor and collector chambers (regions immediately inside the inlet and outlet) (see Carpentier).

Regarding claims 14 and 30, Demuth et al. disclose in Figure 1, corrugated pieces of sheet metal (i.e. fins) (17) arranged between the pipes.

Regarding claim 15, Carpentier disclose in Figure 1, corrugated pieces of sheet metal (i.e. fins) (see Figure 3) having a longitudinal extent corresponding to the inlet and outlet.

Regarding claim 16, Carpentier disclose in Figure 1, corrugated pieces of sheet metal (i.e. fins) (see Figure 3) which are rectangular in shape.

Regarding claim 17, Carpentier disclose in Figure 1, corrugated pieces of sheet metal (i.e. fins) (see Figure 3) which are embodied in the form of a parallelogram and leave an approximate triangular inflow and outflow region between the pipes.

Regarding claim 24, Carpentier disclose in Figures 1 and 3, ribs or inserts which transverse ducts for the second medium (see Figure 3).

Regarding claims 25 and 26, the combined teachings of Demuth et al. and Carpentier disclose all the structural limitations of the claims. The phrases “configured for a single flow on the primary side” (as per claim 25) and “can be configured for a dual flow or more on the primary side” (as per claim 26) are statements of intended use and the device is capable of

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performing the functions. The applicant should be reminded that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitations of the claims, as is the case here.

Regarding claim 31, the combined teachings of Demuth et al. and Carpentier disclose all the structural limitations of the claim including the length of the corrugated pieces (7) being less than a distance from the end plate to the second end plate (Figure 1 of Demuth et al.).

Regarding claim 32, the combined teachings of Demuth et al. and Carpentier disclose all the structural limitations of the claim including the housing extending between the first and piece and the second end piece. It is noted that the shape of the housing is an obvious mechanical expedient to one of ordinary skill in the art and such one of ordinary skill would design a housing which would minimize material and cost as well as maintaining a suitable profile for the desired needs of the device. Thus the combined teachings of Demuth et al. and Carpentier disclose all the structural limitations of the claim.

4. Claims 8 and 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Demuth et al. (DE 10260030) in view of Carpentier (U.S. Pub. No. 2001/0050166 A1) in further view of Hayashi et al. (U.S. Pub. No. 2003/0019616 A1).

Regarding claim 8, the combined teachings of Demuth et al. and Carpentier disclose all the claimed limitations except the casing being connected by solder. However, Hayashi discloses a heat exchanger in which the parts are connected together by soldering (Paragraphs [0030]-[0033]). Hence, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the combined teachings of Demuth et al. and Carpentier with the

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soldering of Hayashi et al. because solder is well known and often used in heat exchanger construction so as to form a fluidly tight heat exchanger and reduce the risk of failure.

Regarding claim 9, Hayashi et al. disclose in Figure 3B a housing which is rectangular in cross section having 4 sides.

5. Claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demuth et al. (DE 10260030) in view of Carpentier (U.S. Pub. No. 2001/0050166 A1) in further view of Hirao et al. (U.S. Patent No. 6,237,357 B1).

Regarding claim 27, the combined teachings of Demuth et al. and Carpentier disclose all the claimed limitations including utilizing two fluids, but not the first medium being a refrigerant which can operate in dual phase. However, Hirao et al. disclose a heat exchanger which utilizes refrigerant as a fluid and operated in a dual phase (Column 1, line 63- Column 2, line 9). Hence, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the combined teachings of Demuth et al. and Carpentier with the refrigerant of Hirao et al. because this is a well known type of refrigerant used in heat exchangers and having a dual phase refrigerant allows for the overall amount of heat transfer to increase since more heat can be exchanged by the fluid.

Regarding claim 28, the combined teachings of Demuth et al, Carpentier, and Hirao et al. disclose all the claimed limitations including utilizing two fluids (see Carpentier) and having one of the fluids be a refrigerant (see Hirao et al.). It is noted that it would be an obvious mechanical expedient to one of ordinary skill to choose a heat exchange fluid such as refrigerant for either fluid in the heat exchange device, since it is well known that heat exchangers often utilize refrigerant due to its good heat exchange properties.

Response to Arguments

6. Applicant's arguments filed 12/7/2009 have been fully considered but they are not persuasive.

7. In response to applicant's argument (pages 13 and 14) that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, if a liquid were utilized in Demuth et al. instead of air, the liquid would not be contained line the system. Thus, by adding the housing of Carpentier a fluid such as a liquid can be utilized and the liquid would be able to surround the pipes and be in a "self contained" system. Without the housing, the fluid would simply spill onto the floor and not surround the pipes to be able to take part in the heat exchange of the system. Further, in response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Therefore, applicant's arguments are not persuasive and the rejection is maintained.

In response to applicant's arguments (page 15, paragraph 2) that the reference does not teach longitudinal ducts, the examiner disagrees as Carpentier clearly shows in Figure 4, the fins with the ducts (i.e. spaced between the corrugations) having a flow going through them (see arrows F1 and F2 in Figure 4). Further, the Examiner had inadvertently indicated the wrong reference number in the previous action. The correct reference number for the fins is (17). However, since the scope of the claim has been changed, this point is moot. Therefore, the applicant's arguments are unpersuasive and the rejection is maintained.

In response to applicant's arguments (page 15, paragraph 3) against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). It is noted that the shapes of the corrugated pieces can clearly be seen in Figure 1 of Carpentier and that the combined teachings of Demuth et al. and Carpentier disclose all the structural features of the claim. Therefore, the applicant's arguments are unpersuasive and the rejection is maintained.

8. Applicant's arguments with respect to claims 29-32 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRANDON M. ROSATI whose telephone number is (571)270-3536. The examiner can normally be reached on Monday-Friday 8:00am- 4:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler or Frantz Jules can be reached on (571) 272-4834 or (571) 272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BMR
3/8/2010

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